NORTH-WEST UNIVERSITY
YUNIBESITI YA BOKONE-BOPHIRIMA
NOORDWES-UNIVERSITEIT
VAAL TRIANGLE CAMPUS

Requirements for this paper:			
Multiple choice cards:	☐	Non-programmable calculator:	☐
Graph paper:	☐	Laptop:	☐

Open book examination ☐

EKSAMEN/ EXAMINATION:	Exam June 2016/Eksamen Junie 2016	KWALIFIKASIE RIGTING/ / QUALIFICATION :	**BSc IT Hons**
MODULEKODE/ MODULE CODE:	**ITRI615**	DUUR/ DURATION:	2 ½ hours 2 ½ ure
MODULE BESKRYWING/ SUBJECT:	Computer Security I Rekenaar Sekuriteit I	MAKS / MAX:	80
EKSAMINATOR(E)/ EXAMINER(S):	Dr C van der Vyver	DATUM / DATE:	**17/6/2016**
		TYD / TIME:	**9:00**
MODERATOR:	Dr M Kirlidog		

1. What are the four main types of threats to a computing system? Discuss each one briefly.
Wat is die vier hoof tipes bedreigings vir 'n rekenaarstelsel? Bespreek elkeen kortliks. **(8)**

2. Software controls are considered the second facet of computer security. What are these software controls?
Sagteware maatstawwe word as die tweede faset van rekenaar sekuriteit beskou. Wat is hierdie sagteware maatstawwe? **(4)**

3. Illustrate the working of the Merkle-Hellman knapsack by using 101111 as your plaintext and 1 4 9 15 30 70 as your knapsack.
Illustreer die werking van die "Merkle-Hellman knapsack" deur van 101111 as jou gewone teks en 1 4 9 15 30 70 as jou knapsack te gebruik. **(8)**

4. Discuss the working of the Advanced Encryption Standard.
Bespreek die werking van die Gevorderde Enkripsie Standaard. **(7)**

5. Name and describe the different kinds of nonmalicious program errors. Why are they referred to as nonmalicious?
Noem en bespreek die verskillende tipes nie kwaadwillige programfoute. Hoekom word na hulle verwys as nie kwaadwillig? **(8)**

6. What are some of the protection mechanisms that exist for memory and address protection in multiprogramming?
Wat is sommige van die beskermingsmeganismes wat bestaan vir geheue en adres beskerming in multiprogrammering? **(6)**

7. As the number of users increase, so too does the complexity of file protection schemes. Name these schemes along with the main shortcoming of each.
Soos die hoeveelheid gebruikers toeneem, so neem die kompleksiteit van lêer beskerming skemas ook toe. Noem hierdie skemas tesame met die hoof tekortkoming van elkeen. **(7)**

8. What are the main difficulties with regards to the use of passwords for user authentication?
Wat is die hoof probleme met betrekking tot die gebruik van wagwoorde vir gebruiker verifikasie? **(4)**

9. What are the characteristics we look for before referring to software as trusted software?
Wat is die eienskappe waarna ons soek voordat ons na sagteware verwys as vertroude sagteware?
(4)

10. Typical operating system flaws can be attributed to four main known vulnerabilities. What are these vulnerabilities and what are the assurance techniques that exist to address them? Discuss each technique briefly.
Tipiese bedryfstelsel foute kan toegeskryf word aan vier hoof kwesbaarhede. Wat is hierdie kwesbaarhede en wat is die versekeringstegnieke wat bestaan om hulle aan te spreek? Bespreek elke tegniek kortliks. **(10)**

11. Discuss fire suppression from a portable, manual or automatic apparatus perspective.
Bespreek brandbestryding vanuit 'n draagbare, met die hand of outomatiese apparaat perspektief. **(8)**

12. From a physical security perspective, what are the major threats with regards to the interception of data? Discuss each threat briefly.
Vanuit 'n fisiese sekuriteit perspektief, wat is die hoof bedreigings met betrekking tot die onderskepping van data? Bespreek elke bedreiging kortliks. **(6)**

TOTAL/TOTAAL: 80